

# Composite Components 3: Backing Components

1. Make a composite component that collects a temperature. The user should be able to enter the temperature in either Celsius or Fahrenheit, but the server value should always be the temperature in Celsius. The visual appearance should consist of a textfield for the numeric value plus a dropdown menu (combobox) to select the units (either C or F, with C as the default).



Hints:

- There is no need for `encodeBegin`: omit it entirely from your backing component.
  - For `getConvertedValue`, start by getting the value of the temperature textfield and converting it to a double with `Double.parseDouble`. Then, get the value of the dropdown menu (`String`). If the value is “C”, you are done: just return the temperature. If the value is “F”, convert the temperature from F to C and return that result.
  - The only attribute of your component will be “value”.
2. Test your composite component by making a page that lets a user order some soup. The user enters the name of the soup (e.g., “Tomato”) and the temperature of the soup. The temperature can be entered in either C or F, but the managed bean property associated with the field is in C (e.g., `get/setSoupTemperatureInC`). But, you can also make a `getSoupTemperatureInF` method to use for output only. To simplify things, feel free to steal my `SoupBean` from `composite-components-3-exercises` (but, of course, write the underlying component yourself).
  3. In the previous example, the units are always C when the form is first displayed to the user. Now, add a “units” attribute to your component, whereby the page author can specify the initial units (C or F). Hints:
    - Have your component store the units, so it should have `getUnits` and `setUnits`. Call `setUnits` via `c:set` in the component.
    - Add an `encodeBegin` method to your component. If the units are “C”, nothing needs to be done. But if the units are “F”, you need to convert the temperature from C to F before inserting it into the textfield.
  4. Test with the same soup-ordering application as before.